

AMENDMENTS TO THE CLAIMS

The status of the claims as follows:

1. (Cancel)
2. (Cancel).
3. (Cancel).
4. (Presently Amended) A method of detecting one or more protein-protein complexes of a rare cell type in a sample containing a mixed population of cells such that each protein-protein complex has a first protein and a second protein, the method comprising:

immunomagnetically isolating from the sample a subpopulation of cells containing the rare cell type with one or more antibody compositions, wherein each antibody composition is specific for a cell surface antigen in the protein-protein complex of the rare cell type and wherein each antibody composition is attached to a magnetic particle;

combining with the subpopulation of cells

(a) one or more different first binding compounds specific for each first protein of each of the one or more protein-protein complexes of the rare cell type, wherein each first binding compound has one or more molecular tags releasably attached thereto, the one or more molecular tags of each different binding compound having a distinct separation characteristic so that the one or more molecular tags of each different binding compound form distinct peaks in a separation profile upon separation; and

(b) one or more different second binding compounds specific for each second protein of each of the one or more protein-protein complexes of the rare cell type, wherein each

second binding compound is conjugated to a cleaving-inducing moiety having an effective proximity;

wherein each of the first binding compounds specifically binds to each first protein and each of the second binding compounds specifically binds to each second protein, and wherein the one or more molecular tags of each first binding compound are released; and

separating and identifying the released molecular tags to detect the one or more protein-protein complexes in the sample..

5. (Original) The method of claim 4 wherein said protein-protein complex is a receptor dimer.

6. (Original) The method of claim 5 wherein said predetermined separation characteristic is electrophoretic mobility.

7. (Original) The method of claim 5 wherein said receptor dimer comprises one or more ErbB receptors.

8. (Original) The method of claim 7 wherein said protein-protein complex is selected from the group consisting of Her1//Shc, Her2//Shc, Her3//Shc, Her3//PI3K, and IGF-1R//PI3K.

9. (Cancel).

10. (Cancel).

11. (Previously presented) The method of claim 4, wherein the rare cell type is a cancer cell.

12. (Previously presented) The method of claim 4, wherein the rare cell type is a fetal cell.

13. (Cancel).

14. (Cancel).
15. (Cancel).
16. (Cancel).
17. (Previously presented) The method of claim 4, wherein the sample is a patient sample.
18. (Previously presented) The method of claim 4, wherein the sample is a biological sample.
19. (Previously presented) The method of claim 18, wherein the biological sample is a culture, blood, saliva, cerebral spinal fluid, pleural fluid, milk, lymph, sputum, semen, needle aspirate sample.
20. (Previously presented) The method of claim 19, wherein the biological sample is a blood sample.